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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,213	02/01/2002	Peter G. Hartwell	10006165-1	5663

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EXAMINER

MALDONADO, JULIO J

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/066,213

Applicant(s)

HARTWELL ET AL.

Examiner

Julio J. Maldonado

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-9 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,5,6,8,9 and 21-23 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 4 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The cancellation of claims 1 and 2 in paper filed on 02/02/2004 is acknowledged.
2. Claims 3-9 and 21-23 are pending in the application.

### *Claim Objections*

3. Claim 21 is objected to because of the following informalities: where claim 21 recites, "...the periphery of the first portion...the periphery of the second portion..." should recite --the periphery of a first portion...the periphery of a second portion--. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 22 and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 22 recites, "...such third component is not located between the first wafer and the second wafer...". Also, claim 23, recites "...the third wafer supports a fourth component...". However, there is no description in the submitted disclosure of a third component not being located as claimed, neither of a third wafer having a fourth component, thus adding new matter to the claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 3, 5-7, 9 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshihara et al. (U.S. 6,555,901 B1).

In reference to claim 21, Yoshihara et al. (Figs.4-17) teach a method for producing a die assembly comprising providing a wafer stack having a first wafer (35) and a second wafer (31) arranged in an overlying relationship with each other, a first portion of the first wafer (35) supporting a first component, a second portion of the first wafer supporting a second component, the first component and the second component being located between the first wafer (35) and the second wafer (31); exposing the first portion and the second portion of the first wafer (35) by removing a portion of the second wafer (31); and dicing the first wafer (35) between the first component and the second component to form a first die assembly and a second die assembly, the first die assembly including the first portion of the first wafer (35) that extends outwardly beyond the periphery of a first portion of the second wafer (31), and the second die assembly including the second portion of the first wafer (35) that extends outwardly beyond the periphery of a second portion of the second wafer (31) such that neither the first

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component nor the second component is located between the first wafer (35) and the second wafer (31) (column 5, line 55 – column 8, line 41).

In reference to claim 3, Yoshihara et al. teach wherein the first component is configured to electrically communicate with a component external to the wafer stack (column 4, lines 3 – 11).

In reference to claim 5, Yoshihara et al. teach wherein the exposing of the first and second portion comprises dicing the second wafer to enable detachment of the portion of the second wafer from the stack; and removing the portion of the second wafer from the wafer stack (column 8, lines 13 – 19).

In reference to claim 6, Yoshihara et al. teach wherein dicing the first wafer between the first and second component comprises performing a through-cut of the wafer stack to at least partially detach the first die assembly from the wafer stack (column 8, lines 32 – 41).

In reference to claim 7 Yoshihara et al. teach wherein the second wafer defines a recessed portion, the recessed portion being arranged in an overlying relationship with the first component, the recessed portion being configured to enable a partial through-cut of the second wafer in a vicinity of the recessed portion such that the first component is not damaged during formation of the portion through cut; and wherein exposing the first portion and the second portion of the first wafer comprises performing a partial through cut of the second wafer in the vicinity of the recess portion such that the first component is not damages by the partial through cut (column 8, lines 20 – 41).

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In reference to claim 9, Yoshihara et al. teach performing a first and a second partial through-cut of the wafer stack to at least partially detach of a portion of the second wafer from the wafer stack, the portion of the second wafer to be detached being arranged between the first partial through-cut and the second partial through-cut (column 8, lines 20 – 41).

***Allowable Subject Matter***

8. Claims 4 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 22 and 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, Yoshihara et al. fail to teach a third wafer over the second wafer.

***Response to Arguments***

11. Applicant's arguments with respect to claims 3-9 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is 571-272-2800. See MPEP 203.08.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Julio J. Maldonado whose telephone number is (571) 272-1864. The examiner can normally be reached on Monday through Friday.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (571) 272-1855. The fax number for this group is 703-872-9306 for before final submissions, 703-872-9306 for after final submissions and the customer service number for group 2800 is (703) 306-3329.

Updates can be found at <http://www.uspto.gov/web/info/2800.htm>.


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Julio J. Maldonado  
Patent Examiner  
Art Unit 2823

Julio J. Maldonado  
April 9, 2004



George Fourson  
Primary Examiner